SUITABILITY ANALYSIS FOR KINDERGARTEN

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Suitability Location Analysis for Kindergarten

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CERTIFICATION OF APPROVAL

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CERTIFICATION OF ORIGINALITY

This is to clarify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgments, and the originality work contained herein have not been undertaken or done by unspecified sources or persons

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ABSTRACT

This dissertation report basically discusses the research done of the chosen topic, which is the **Suitability Location Analysis for Kindergarten**. The specific location of study is at Meru, Ipoh. The ultimate objective of the studies is to identify considered factor for suitability analysis of kindergarten based on requirement sites and hazardous environmental risk and also to assist in proper placement of a kindergarten using spatial analysis. Kindergarten is the first formal education center. It is the place where children could learn everything from early age. So the suitable site is important to ensure that their surrounding is conducive for learning. Decision making is a tough process to make. Especially when dealing with the decision that involves competing alternatives. Geographical Information System (GIS) is the powerful geospatial analysis tools that could aid the decision maker to make the best choice in decision by considering the constraint and factor as the criteria for evaluation instead of the site requirement by the local authority. The geospatial analysis software that used in this case study is the Map Info Professional 7.0. The outcome of this study is the suitability map that shows the various suitable location for the kindergarten at Meru, Ipoh.

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CHAPTER 1: INTRODUCTION

1.1 Background of Study

Kindergarten is defined by Wikipedia (2010) with its literally meaning as "Children Garden". This institution functioned as first formal education centre for children. It is the place where the children developed their basic skills through creative play and social interaction. In Malaysia, "kindergarten or pre-schooling also becomes a part of the National Education System under jurisdiction of Ministry of Education (MOE) "(Ministry of Higher Education, 2009). Children usually attend kindergarten at the age of four till six years old. For children who previously have spent most of their time at home, kindergarten may serve the purpose of helping them adjust to being apart from their parents without anxiety. It may be their first opportunity to play and interact with a consistent group of children on a regular basis. Kindergarten may also allow mothers, fathers, or other caregivers to go back to part-time or full-time employment without worries of their children.

1.2 Problem statement

Decision making is a common practice in everyday life. Every one hopes for an accurate and suitable decision. But then, it becomes a problem when the alternatives for the decision have similarities in their strength and weakness. This problem is more crucial when the decisions that need to be made involve the futures of the children. Kindergarten is an important place for children since it is the first formal education center for them, where they to learn new things and basic skills at early age. The developments of the children are superb at this age, because they are in the phase on developing physical, cognitive, social and emotional skills. Their interactions with the physical environment can have long-lasting effects. Due to that, the kindergarten need to be at the suitable location and also conducive for learning. So that learning curve of the children would not be distorted by the unnecessary factors such as non-conducive surrounding.

1.3 Objectives

The main objective of this study is to develop an approach using Geographical Information System (GIS). The assumption is based on the suitability analysis to identify suitable places for kindergarten in Meru, Ipoh. The specific research objectives for this study are:

1) To identify the factors or criteria for suitability analysis for kindergarten based on sites requirement and hazardous environmental risk.

2) To evaluate the proper placement of a kindergarten using spatial analysis (GIS)

1.4 Scope of Study

The author focuses the suitability location analysis at Meru, Ipoh. This project uses Geographical Information System (GIS) as analysis tools to solve the spatial analysis problem. The aspect of the study specifically highlighted to select the suitable location of kindergarten. The criteria of evaluations that being considered in this study are the site requirements from the local authority (Ipoh City Hall) and also the environment site considerations. Other aspect of criteria such as social aspect and curriculum syllable, not being focused in this study since the Ministry of Education had emphasized this element during the registration of the kindergarten. The guidelines provided by the ministry of education need to be followed before the application is approved.

CHAPTER 2: LITERATURE REVIEW

2.1 Land Suitability Analysis

Duc (2006) says that "The land suitability analysis is the ability of a given type of land to support a defined use". The sustainable developement approch demand the roles of this suitabilty analysis. The principle of the sustainable development result in complicated land uses due to the consideration of multiple requirement or criteria. The consideration not only to support the decisions that meets a specific land use but also to make sure that inherent capacity of unit land also sustainable without deterioration for long period of time. In order to perform the suitability analysis, applications of GIS could be implement especially regarding the geospatial analysis. The applications of the GIS for suitability analysis has been applied in wide variety of situations including ecological approaches as referring to Hendrix et. al. (1988), "defining land suitability/habitat for animal and plant species" (Sicard, 2005), for "agricultural activities" (Lee, 1992), "selecting the best site for public and private sector facilities "(Malczewski, 2004).

2.2 Geographical Information System

"GIS could be integrated with the Multiple Criteria Decision Making methods (MCDM) in supporting spatial decision-making process "(Jankowski, 2004). GIS that have the capability to overlay the digital maps enhanced the land suitability study. The suitability analysis results in generating various numbers of alternatives.

The final results may display using GIS displays capabilities. Two approaches are used to integrate the MCDM and GIS. The approaches are weighted summation and

vector - based GIS and MCDM techniques. The selected techniques depends on the way of the data model used in GIS whether raster cells or lines, points or polygon. The roles of GIS is not in solving land use allocation, site or route selection problems but also in helping the decision makers to assign priority weights to decision criteria, evaluate the suitable alternatives and visualize the results of choices.

2.3 GIS application for planning evaluations

There is various GIS application for planning evaluations as stated by Yaakup et. al. (2002). The applications are as follow:

- Abiding the development plans - Information on zonal development policies could adapt with the spatial matters. The GIS database can be incorporated to display and allow certain queries related to the policies.
- Identifying development stages and patterns - Any given development pattern can be identified from past data and development trends. This will help the decision makers identify the development activities and potential development at any given site.
- Land acquisition - GIS will help the planners to project implications and identify alternatives before such action take place. Besides, to explain and inform the current landowners of the scenario and overcome potential to such action.
- Planning evaluation report - GIS provides technical committees with the various comprehensive analyses on the proposed developments plans. This capability could reduce the evaluation process to quarter of the time presently spend
- Current and accurate information - This application will assist the town planning community in comparing present scenario with the proposed development.
- Building design of suitability evaluation (3-D view) - It will allow the potential viewing on the impacts of the development.

2.4 Geographical Information System (GIS) as spatial analysis tools

GIS is "significant in collecting and organizing spatial data for the application of location model" (Malczewski, 2004). The GIS data that could be characterized at a finer level of detail or scale could satisfy the need when facing large location and data problem.

Furthermore, the data assumes that land use, land zoning and land availability are also characterized in individual data layers. Then it might be possible to identify potentially feasible sites as well as calculate the distances between feasible sites and demand points in a short time.

Another main benefit that can be derived from GIS is that data collected and stored in a GIS for one purpose can be easily made available to a number of applications, including location modeling, thereby sharing the costs of data collection and storage. Consequently, it seems reasonable to expect that many siting applications will involve a data storage system that is a combination of GIS data files or public records. Thus, GIS will at least "serve as a data repository and help assemble data from different sources in many future location studies" (Malczewski, 2004).

2.5 Geographical Information System (GIS) Software

There is an enormous ranges of GIS software which are available for almost every computer platform. The availability of GIS software that can be classified according to their intended application area are : GIS data viewers, desktop GIS, high - end GIS as shown in Table 1.

Table 1: Different types of GIS software

	GIS data viewers	Desktop GIS	High – end GIS
Computer hardware required	Desktop PC	Desktop PC	Workstation and often a separate database server
Approximate cost	Free or low cost	US $100-$500	Full – time GIS experts
Primary Users	The general public, non-experts	Full – or part time GIS experts	Full time GIS experts
Major uses	Displaying and querying a specified data set provided by a public agency or other organization, usually cannot be further customized by users, or except additional Data	Database management, queries, and display , often at a project level	Full – fledged data and application development, statistical analysis, and high – quality map production, often enterprise – wide or over a network
Examples	ArcExplorer, GeoMedia Viewer, MapInfo, ProViewer	ArcView, Autodesk World, Maptitude, Idrisi, GeoMedia, MapInfo Professional	ArcGIS, GIS + GeoMedia Pro, MapInfo Professional

- **GIS data viewer** – The applications allows for browsing the data to perform spatial analytical operations. It supports a limited numbers of data format. For example ArcExplorer. ArcExplorer is a GIS data viewer that offers the easy way to perform basic GIS applications namely display , query and data retrieval applications. It can be used its own with local data sets or interet data and map server.
- **Dekstop GIS** - The software has the traditional applications designed to run on desktop PC usually with Windows operation system and mouse-based interface. This software have the ability to input, store, manipulate and analyze the output spatial data. The weakness of this software is that it could not digitize map information and the user must rely on date already in a pre-defined digital format. Yet, it is usually more user friendly than high - end system.
- **The high - end GIS system - The software has the fully functional GIS tools kits** which often require powerful UNIX-based workstations. The customization may include the developement of Graphic User Interfaces (GUI) and also the Dynamically Linked Libraries (DLL) as stated by Malczewski (2004).

CHAPTER 3: METHODOLOGY

The fundamental concept in decision making process is the procedural rationality, which means the effectiveness of decision support procedures in search of the relevant decision alternatives. The procedurally rational model of decision making process could distinguish the following four steps that are generally appropriate for a structured approach to decision situations. The four steps are as shown in figure 1:

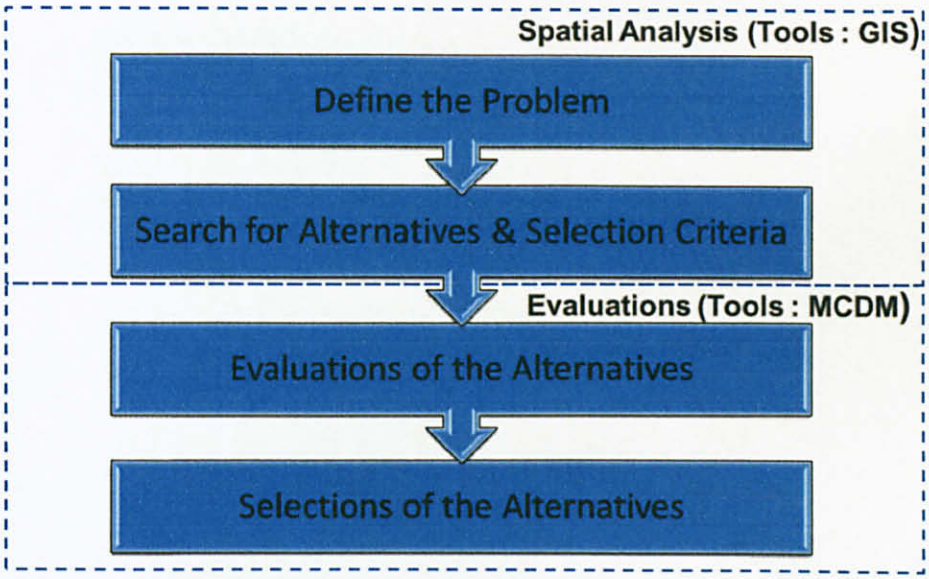


Figure 1: Rational model of decision making process

The role of GIS is used specifically in searching the feasible alternatives. Then, the Multiple Criteria Decision Making-Methods (MCMD) could play its roles as powerful tools in reducing the feasible alternative, in order to identify the best alternatives.

GIS is "conventionally seen as a set of tools for the input, storage and retrieval, manipulation and analysis, and output of spatial data" (Malczewski, 2004). In the addition," user specifically could create a buffer, intersection, proximity analysis, spatial joins and other analytical operations" (Aulia, 2010). In terms of suitability analysis, a user could determine the suitable locations for the development. This proved that GIS analysis could provide support for decision - making. The spatial analysis process using GIS as tools for analysis are as follows:

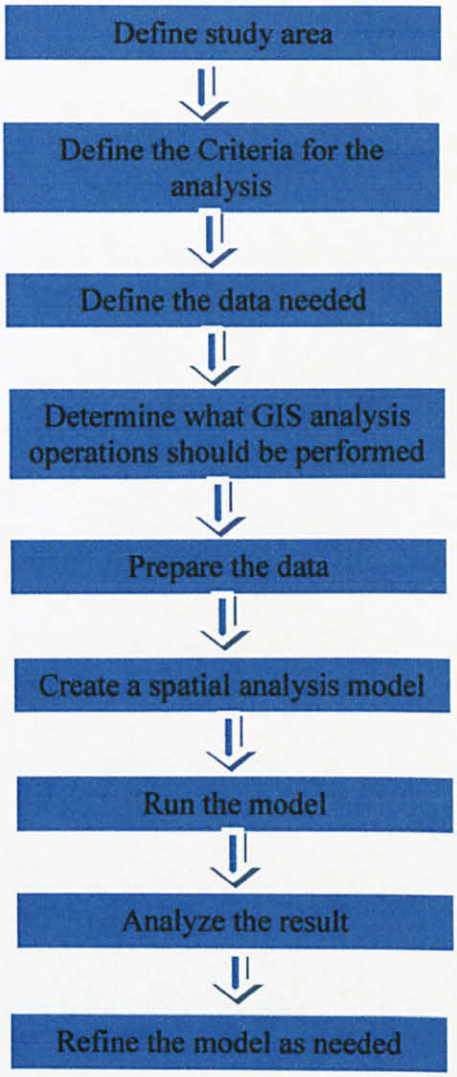


Figure 2: Flowchart of spatial analysis using GIS

3.1 Identified Study Area Location

The author had identified the study area location. The selection criteria used to identify the study area location are:

3.1.1 Population

The population at expected place is identified by the author by referring to Departments of Statistic Malaysia. The population is crucial for this study because the study aims to help the decision makers (local authority or entrepreneur) to select the potential location for the kindergarten. The location must have large population, so that the potential customer for the service also large as according to (Leung and Hanna, 2010), they modelling a case study involving about 500 families.

3.1.2 Demography at the study area location

Demography is the statistical study of human populations and their characteristics. The criteria of study could be the family size, age group, household income, race, gender, occupation and etc. The author just focuses about the demography at the study area in terms of age group. These criteria identified as crucial, since the numbers of children is important to justify whether the study area is relevant to be choose. "The decisions maker could consider the area that catering for 30 until 40 children in an area of major residential development or a childcare facility for each 75 dwellings " (Government of Ireland, 2001).

3.1.3 Topography

Topography is the description of such surface shapes and features (especially their depiction in maps) of a location. The topography of the study area has tight relations with the cost for development of the project. If the topography of the study area is hilly area or valley, more capital is needed to construct the project since more precautions need to consider.

3.1.4 Existing infrastructures and services

Infrastructures that defined by the author in this study are the availability of good transportation facilities, water supply, telecommunications facilities, electricity, municipal sewerage and also sewage treatment facilities. All of the infrastructures are the basic needs for human beings. A good transportation facility is measured with the existence of main road that could be access by any public or private mode of transportation. While the services referred by the author are the hospital, fire services department, police station and school. This infrastructures and services is the necessary aspect to sustain the population at the certain place. If the population is sustainable, the economic activities also could experience positive growth.

3.2 Defined Criteria for analysis

The criteria for evaluation are identified by referring to the guidelines mainly from local authority (Ipoh City Hall) as shown in Appendix 1. Basically, the content of the guidelines are the important element for kindergarten site requirement in Malaysia. The constraint and factor for criteria analysis are acquired from the child care design guide book as definite by Olds (2001).

3.3 Defined Data Needed

The data needed for the spatial analysis model in this case study are the Land Use Map of Meru, Ipoh. The map could be acquired at Ipoh City Hall. "The indicator for suitability criteria which are the constraint and also factor" is determined from the literature review as says by Olds (2001). There is a lot of criteria for constraint and factor that being analysed. The detailed of the avoided sites for the kindergarten location are as per shown in Table 3. Not all the item in the list that applicable to be used as criteria for evaluation in this study since it must be related to the existing condition at Meru.

3.4 Determine GIS analysis operations

There are "four GIS analysis operations" that have been considered for this study (Aulia, 2010):

- Raster to Vector Conversion
- Reclassification
- Map Algebra – multiply by a constant (absolute weight) /add layer
- Buffer

The buffer analysis operation is used in this study. Buffer analysis could create a zone of specified width around a point, a line, a polygon area or specified distance around coverage features. Since the available criteria for evaluations chosen for this study are the distance of the kindergarten from the constraint and factors. So, "the zones or buffers can be used in queries to determine which locations occur within or outside of the defined buffer zone" (Mandagere, 2006).

3.4.1 Buffer

Buffer is a region that surrounds a line object, another region, symbol or any other object in a Map window. There are different methods for buffer such as :

- Radius – The radius is the width of the buffer that the users want to create around the object selected. The value and the column radio buttons give the different way to specify the width.
- Value – The value is typed if the user wants to create a specific distance.
- From column – The method is choose if the user want to create the buffer that have specified distance in a particular column or is to be calculated by an expression.
- Units - Unit is select if the users want to buffer from this drop – down list.
- Smoothness - The number of segments per circle that will determine the resolution of the curve. Default is 12 segments per circle while the maximum is 100 segments. More segments produce smoother curve.

3.5 Prepare the data

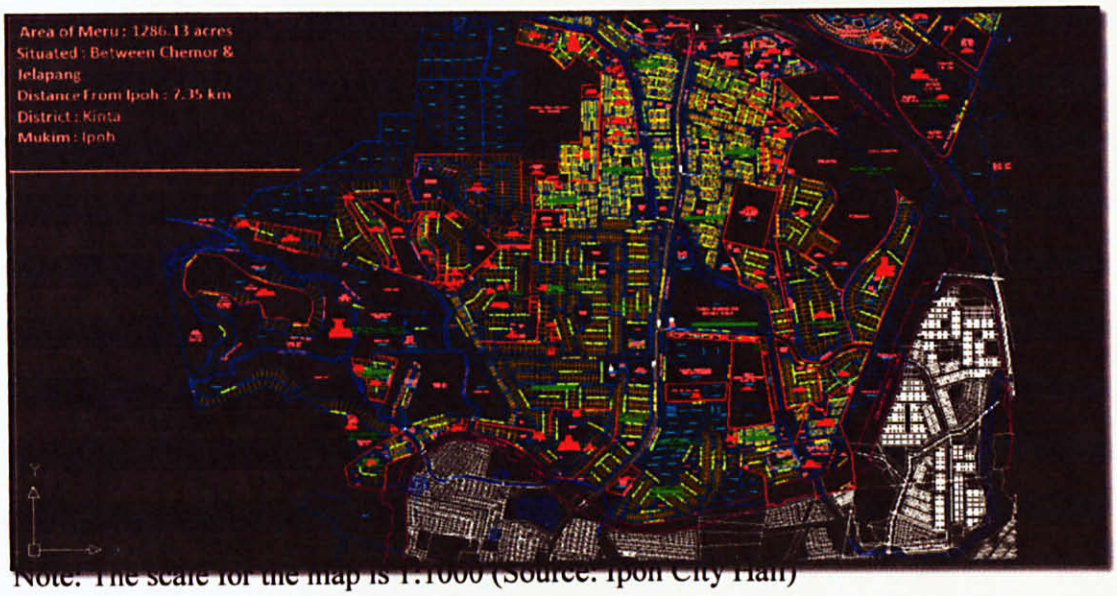
After the GIS operations are determined, the data must be prepared for the model. This includes clipping the data to the correct boundary and creating subsets of data. For the ease of the process the author prepared the spatial analysis model.

Spatial analysis model is the model how to process of creating or extracting new information about a set of geographic features. Spatial analysis is useful for evaluating suitability and capability, for estimating and predicting, and for interpreting and understanding as stated by Camara et. al. (2004).

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Determination the specific area of study

The main area of focused at the Zone A of Ipoh land use plan, which is at Meru. Meru is located under the district of Ulu Kinta and the Mukim of Ipoh. The selected study area is only 1286.13 acres. The boundary of the study area is as shown below:



Note: The scale for the map is 1:1000 (Source: Ipoh City Hall)

Figure 3 : Land use map zone A, Meru Ipoh

These are various justifications why Meru is chosen as the study area location. The reasons are justified as below.

4.1.1 Population

Meru is under the districts of Kinta and Mukim of Ulu Kinta - Ipoh. The population are approximately about 37,650 people. This figure was identified by the

Statistical Department of Perak as shown in the Table 2. The population there is quite large and this also could indicate the potential customer for the service also large.

Table 2: Population of Mukim Ulu Kinta

No	Mukim	Population(people)
1	Ulu Kinta - Ipoh	37,650
2	Ulu Kinta - Chemor	20,179
3	Ulu Kinta - Lahat	36,110
4	Ulu Kinta – Tanjung Rambutan	64,500

Source: Pejabat Daerah Tanah Ulu- Kinta, Perak

4.1.2 Demography at the study area location

Demography at the study area location is just focused in the terms of age group. The data (Appendix 2) shows that the numbers of the targeted age group which is the children is 292 children which are about 0.6% from the populations there. These indicate that the study area is relevant to provide the kindergarten services.

4.1.3 Topography

Topography area in the map of Ipoh shows that the elevation of Meru is about 100m until 300m which is quite flat, (Appendix 3). So, the capital cost needed for development project at this area not so high since the developer does not have to bear with the topographical constraint.

4.1.4 Existing of utilities and services

There are good transportation routes available at Meru. This is indicated in the Utilities map of Meru as shown in (Appendix 4). The land use map also shows others utilities and services such as municipal sewage treatment plant, clean water supply, telecommunications facilities, sports complex, mosque, industrial area, open space areas, shops, business centre, medical centre, government building, fire department and etc. are available at study area. This urban utilities and services is the growth factor that could attract and sustain the population at the place. When the population is sustainable at the place, the economic activities also could grow ahead.

4.2 Criteria of evaluation for alternatives

The criterion of evaluation for the alternatives was the most important in the framework model. There are two criteria of analysis for this case study. The criteria can be categorized as the constraint and factor.

4.2.1 Constraint Criteria

"Fundamental environment issues should be evaluated at the very beginning of the site selection process" (Olds, 2001). Failure to meet any of the environmental considerations should probably disqualify a site, before considering other issues. Table 3 below shows the environmental considerations for site selections.

Table 3: Environmental considerations in site selections

Avoided sites
Industrial dust emissions or fumes, exhaust from incinerator, waste handling
Concentrated automotive fumes
Wind carried pollutants
Toxic Substances such as asbestos, lead paint
Disruptively high noise levels from airports, traffic, manufacturing facilities
Major long term constructions project
Electromagnetic radiation from high voltage transformer
Toxic vegetation
Open pools, cesspools, wells, exposed legs and cliffs

Source: Anita Rui Olds, "Child Care Design Guide"2001, Mc grew Hills

According to the study case location which is at Meru, Ipoh only certain site considerations that valid for criteria of analysis. The specific site considerations for this case study are as in the Figure 4, namely the sewage treatment plan, industrial area and also the petrol station.

4.2.2 Factor Criteria

Factor criteria are the desirable positives proximities to be located near the kindergarten. The factor criteria location is defined as:

- Near emergency resource – Hospital, Fire Station
- Near positives proximities – School, Museum, Garden

"The childcare facilities should be sited in relationship to other community facility such as school, museum and garden so that it could provide more learning opportunities for the children and also as another approach to make them ease to socialize with the community (City of Vancouver, 1993). Furthermore, natural environment affords possibilities and challenges for the children to explore their own

ability for exercise and mastering in learning process especially their interest in the knowledge of nature. "Children's motor fitness also could be stimulated via letting them playing with nature" (Fjørtoft, 2004). The emergency resources are desirable at the location for kindergarten since it could enhance the sense of safety and security for the children. If there are emergency case occurs, children could be saved first (Olds, 2001).

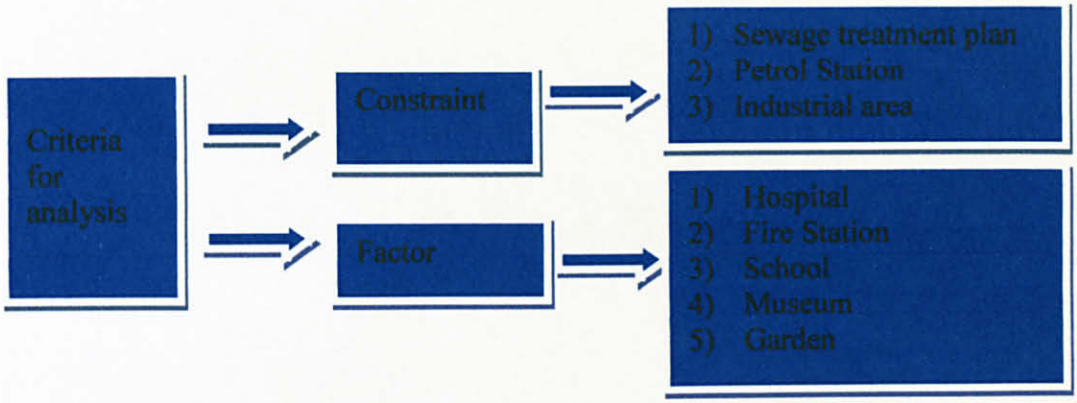


Figure 4: Criteria taken for analysis

4.2.3 Site Requirement

There are restriction to the type of premise that allowed by the Ipoh City Hall as per shown at Appendix 5. The Kindergarten only can be established at:

- Residential area
- Religious centre
- Institution
- Suitability Criteria

To locate a kindergarten there is a need to consider various factors. The identified suitability criteria that consistent with the environmental risk and site requirement are summarized as follows:

Table 4: Suitability criteria for evaluation

Criteria	Location	Indicator (ft)	References
Constraint	Sewage Treatment Plan	>152 ft	(Litoria et. al,1997)
	Petrol Station	> 152 ft	(Aulia and Matori 2010)
	Industrial Area (factory)	> 100 ft	(Rachadawong and Apawootichai,2002)
Factors	Hospital	<15840 ft	(Olds, 2001)
	Fire Station	< 15840 ft	(Olds, 2001)
	School	< 15840 ft	(Olds, 2001)
	Museum	< 15840 ft	(Olds, 2001)
	Garden	< 328 ft	(Fjørtoft and Sageie, 2004)

4.3 Spatial Analysis Model

Designing the spatial analysis model is required to create the backbone of GIS operations analysis for this study. The Process for locating the suitable location for kindergarten is shown briefly in Figure 5.

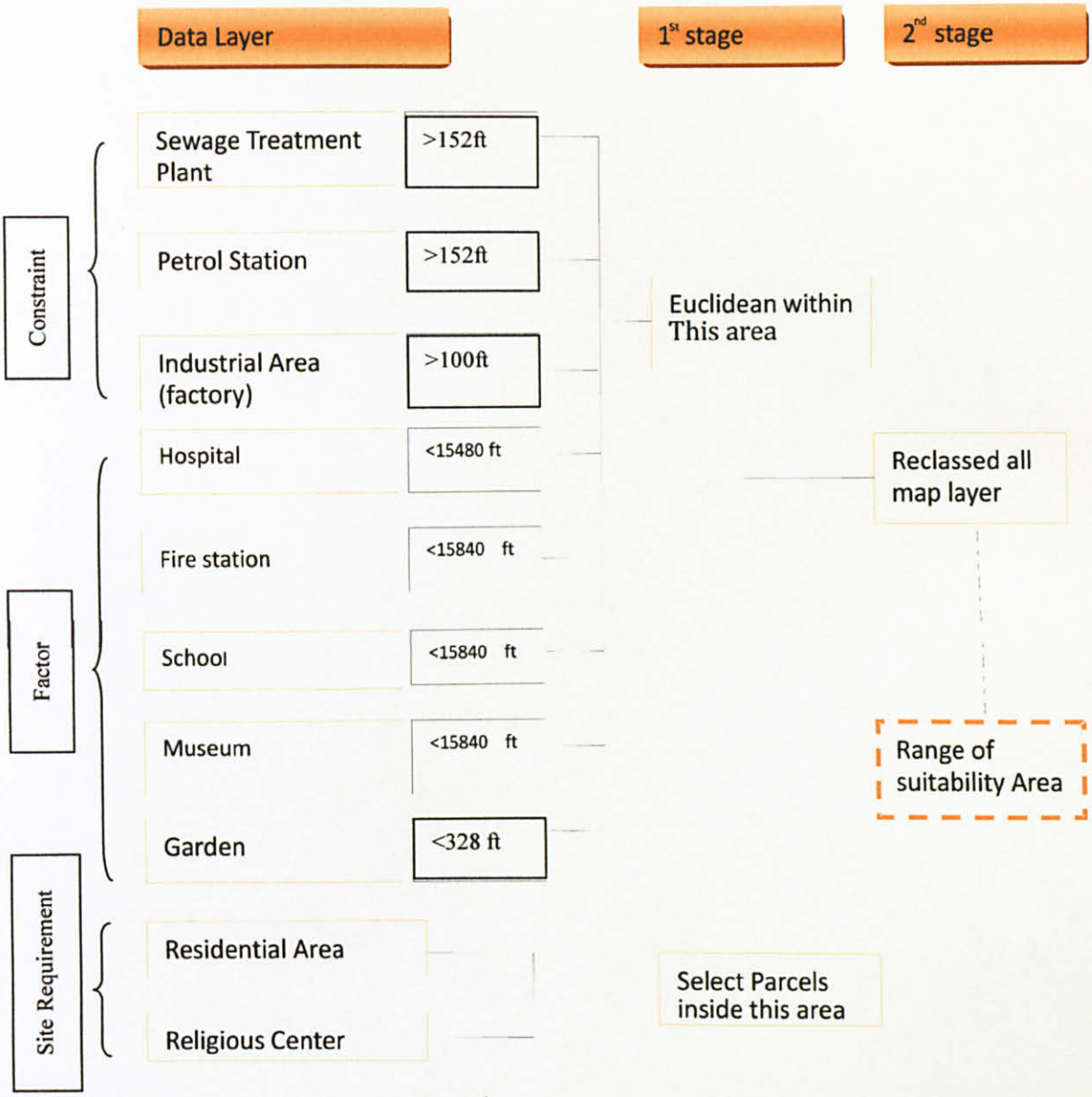


Figure 5: Spatial analysis model

Source analysis 2010

There are several Steps needed to obtain suitable location for kindergarten. Firstly the entire image which is the land use map of Meru, Ipoh must be converted from vector to raster image. Then the layer of site requirement which is the residential area, institution and also the religious centre is established as the base layer for the model. Then the identified location is buffered according to the indicator distance as per shown in Table 4: Suitability criteria for evaluation.

4.4 Suitability Map

The outcome of the analysis is the suitability map for kindergarten at Meru, Ipoh as shown in Figure 6. The author use the MAP Info Professional 7.0 as geospatial tools to construct the spatial analysis model. There are five suitable locations for kindergarten at Meru, Ipoh.

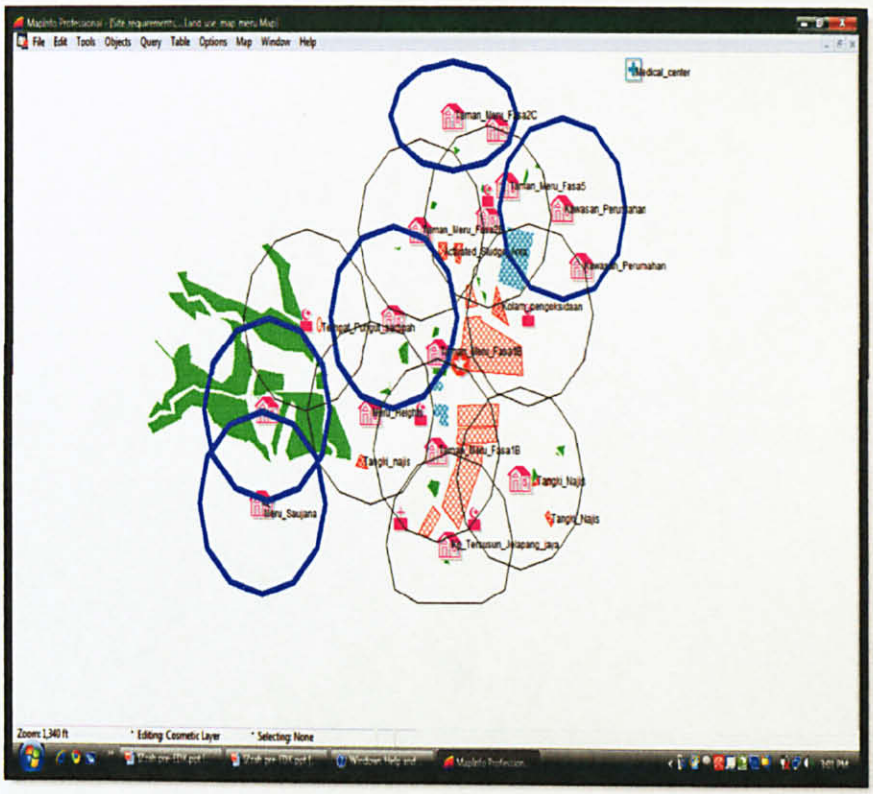


Figure 6: Suitability map for kindergarten at Meru, Ipoh.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The author succeeds to identify the factor for suitability analysis of kindergarten based on sites and hazardous environmental risk. The criteria for evaluation considered by the author were the constraint and factor towards the basic site requirements amendment by the Ipoh City Hall. The Suitable location for the kindergarten at Meru also identified by the author with the blue circle as shown in Figure 6: Suitability map for Kindergarten at Meru, Ipoh. There are five suitable locations for the kindergarten. This study also proved that GIS could assist the decision maker (local authority, developer or the entrepreneur) to choose the suitable location for kindergarten at Meru, Ipoh.

5.2 Recommendations

This study could be further expanding in the future in terms of method that used to establish the structured decision framework. "The suitability analysis also could be integrating with Multiple Criteria Decision Making Method (MCDM) for more comprehensive and transparent decision making" (Malczewski, 2004). Furthermore, the criteria of evaluation could be more enhanced in the future by adding social or qualitative criteria namely aesthetical value and etc. The study also could be more accurate if the data can be obtained in more detail such as population and demography data for each residential area in Meru is included. So that the decision that have to be make could have more clear justifications.

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Appendix 1: Guidelines for Institutional (Ipoh City Hall)

05- 2083273

GARISPANDUAN INSTITUSI TANPA ASRAMA KELAS D

Latifah bt. Abdul Latif

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KELAS KEGUNAAN TANAH DAN BANGUNAN

Kelas Kegunaan adalah senarai aktiviti-aktiviti yang diklasifikasikan di bawah kategori-kategori tertentu mengikut ciri-ciri dan kesan-kesan aktiviti tersebut terhadap persekitaran bagi mengawal penggunaan dan tukar kegunaan tanah dan bangunan.

Kelas D - Adalah merupakan tempat-tempat perhimpunan awam yang tidak melibatkan tempat tinggal.

D 1 : Institusi Tanpa Asrama
D 2 : Sukan dan Hiburan

Kelas D1 : Institusi Tanpa Asrama

Aktiviti-aktiviti institusi tanpa asrama adalah tidak termasuk kegunaan kediaman dan asrama. Kegunaannya adalah untuk aktiviti seperti berikut :-

i. Sebagai tadika, tabika atau pusat/taman penjagaan/asuhan kanak-kanak.
ii. Suatu kemudahan pendidikan seperti tuisyen.
iii. Untuk pameran kerja-kerja seni (selain untuk dijual dan disewa).
iv. Sebagai muzium.
v. Sebagai perpustakaan awam atau bilik bacaan awam.
vi. Sebagai dewan orang ramai atau dewan pameran.
vii. Untuk tujuan keagamaan.

Senarai Aktiviti :

1. Pusat penjagaan/asuhan dan pendidikan pra-sekolah
   a. Tadika
   b. Tabika
   c. Taski
   d. Taska
   e. Nurseri

2. **Pendidikan**
   a. Kolej / Sekolah persendirian
   b. Pusat tuisyen
   c. Sekolah

3. **Pusat Pameran**
   a. Balai Seni Lukis
   b. Pameran kerja-kerja seni (selain untuk dijual dan disewa)
   c. Arkib dan Muzium

4. **Perpustakaan**
   a. Perpustakaan awam
   b. Bilik pameran

5. **Dewan**

   a. Dewan orang ramai
   b. Dewan serbaguna

6. **Keagamaan**
   a. Masjid
   b. Surau
   c. Tokong
   d. Kuil
   e. Gereja
   f. Chapel
   g. Persatuan yang berkaitan keagamaan
   h. Rumah mayat dan dewan upacara
   i. Krematorium dan perkuburan

PERINTAH AM PEMBANGUNAN

Perintah Am Pembangunan (PAP) adalah merupakan petunjuk pemakaian Kelas Kegunaan Tanah dan Bangunan. Ia juga berfungsi untuk memastikan polisi-polisi Pelan Struktur Ipoh dan Rancangan Tempatan dapat dilaksanakan sebaik mungkin.

Sepertimana yang disebutkan di bahagian IV Seksyen 19(1) Akta Perancangan Bandar dan Desa 1976 (Akta 172) tiada seorang pun, lain daripada pihak berkuasa tempatan boleh memula, mengusaha atau menjalankan apa-apa pemajuan melainkan kebenaran merancang mengenai pemajuan itu telah diberi kepadanya.

Di dalam PAP inilah dinyatakan sama ada kebenaran merancang boleh dibenarkan atau dipertimbangkan. Kebenaran Merancang boleh diberikan secara mutlak di peringkat pentadbiran apabila sesuatu aktiviti itu termasuk di dalam kategori boleh dibenarkan. Kebenaran Merancang akan diputuskan oleh Majlis sekiranya kegunaan tanah dan bangunan itu termasuk di dalam kategori boleh dipertimbangkan. Sekiranya Kebenaran Merancang diberikan, sama ada di peringkat pentadbiran atau Majlis, kegunaan tersebut perlu mematuhi syarat-syarat Kebenaran Merancang dan tukar kegunaan yang dikenakan. Seandainya sesuatu aktiviti itu tidak termasuk di dalam mana-mana kategori, Majlis berhak untuk menolak permohonan tersebut.

Bagi tukar kegunaan pula adalah dibenarkan berdasarkan kepada faktor-faktor berikut

i. Tidak melibatkan perubahan yang **matan**
ii. Tidak melibatkan kacau ganggu
iii. Meningkatkan mutu alam sekitar

Kegunaan-kegunaan sampingan kepada sesuatu aktiviti *(incidental use)* seperti aktiviti kantin di kawasan industri boleh dibenarkan sekiranya ia untuk kemudahan kakitangannya sahaja.

Kelas D1 : Institusi Tanpa Asrama

i. Penggunaan Tanah dan Bangunan

a. Aktiviti-aktiviti Institusi Tanpa Asrama seperti yang disenaraikan boleh **dibenarkan** di mana-mana kawasan berikut :-

- Semua aktiviti Institusi Tanpa Asrama yang dikelolakan oleh badan-badan kerajaan boleh dibenarkan di zon berikut :-
  - Zon Rizab Khas / Simpanan Kerajaan

- Aktiviti pusat penjagaan dan pendidikan pra-sekolah boleh dibenarkan di zon berikut :-
  - Zon Perdagangan Terhad
  - Zon Perdagangan Terhad (minimum 1 ekar)

- Aktiviti pendidikan boleh dibenarkan di zon berikut :-
  - Zon Perdagangan Terhad
  - Zon Perdagangan Terhad (minimum 1 ekar)

b. Aktiviti-aktiviti Institusi Tanpa Asrama seperti yang disenaraikan boleh **dipertimbangkan** dimana-mana kawasan berikut :-

- Aktiviti pusat penjagaan dan pendidikan pra-sekolah
  - Zon Kediaman Terbuka
  - Zon Kediaman

- Aktiviti pendidikan
  - Zon Perdagangan

c. Lain-lain aktiviti Institusi Tanpa Asrama yang menyediakan kemudahan kemasyarakatan boleh dipertimbangkan oleh Majlis di zon yang bersesuaian.

ii. Syarat-Syarat Kebenaran Merancang dan Tukar Kegunaan

a. Aktiviti pendidikan yang beroperasi di dalam zon perdagangan (rumah kedai) mestilah mempunyai jalan susur.

b. Masjid, surau dan persatuan-persatuan keugamaan Islam hendaklah mendapat kelulusan dari Majlis Agama Islam Perak.

c. Tokong, kuil, gereja, chapel dan lain-lain persatuan keugamaan hendaklah mendapat kelulusan daripada Pejabat Menteri Besar Perak.

d. Mematuhi garispanduan pembangunan rizab simpanan khas.

e. Mematuhi piawaian tempat letak kereta.

f. Bagi aktiviti pusat penjagaan dan pendidikan pra-sekolah hendaklah mematuhi garispanduan taman asuhan kanak-kanak dan taman didikan kanak-kanak.

g. Aktiviti pendidikan hendaklah mematuhi syarat-syarat Jabatan Pendidikan

GARIS PANDUAN TAMAN ASUHAN KANAK-KANAK DAN TAMAN DIDIKAN KANAK-KANAK

1 Pengenalan

i. Taman Asuhan Kanak-Kanak (TASKA)

Iaitu mana-mana premis yang menjalankan aktiviti penjagaan kanak-kanak yang berumur sehingga empat tahun.

ii. Taman Didikan Kanak-kanak (TASKA)

Iaitu mana-mana premis yang menjalankan aktiviti pendidikan kepada kanak-kanak yang berumur di antara 5 - 6 tahun.

2 Latar Belakang

Aktiviti Taman Asuhan dan Taman Didikan Kanak-kanak adalah merupakan satu aktiviti perkhidmatan sosial yang dianjurkan oleh orang awam sama ada secara individu, berkumpulan atau persatuan dan agensi kerajaan di premis persendirian. Pertumbuhan yang pesat aktiviti ini menunjukkan bahawa perkhidmatannya amat diperlukan oleh masyarakat setempat. Akibat daripada ini timbul beberapa masalah kacau ganggu di kawasan-kawasan perumahan di antaranya ialah :-

i. Kebisingan
ii. Kesesakan lalulintas
iii. Percanggahan aktiviti premis
iv. Keselamatan kanak-kanak

15.3 Tujuan

Garis panduan aktiviti ini disediakan di atas sebab-sebab berikut :-

i. Bagi menyediakan pusat penjagaan dan pendidikan kanak-kanak yang sempurna selesa dan selamat.

ii. Menghindarkan masalah kacau ganggu dari segi kebisingan dan kesesakan lalulintas kepada jiran-jiran bersebelahan.

iii. Untuk mengawal taburan aktiviti ini supaya lebih teratur dan seimbang.

15.4 Cadangan

Berdasarkan kepada sebab-sebab di atas maka satu garis panduan aktiviti Taman Asuhan Kanak-kanak dan Taman Didikan Kanak–kanak telah disediakan seperti di dalam **Lampiran GD1**.

LAMPIRAN GD1

GARISPANDUAN TAMAN ASUHAN KANAK-KANAK DAN TAMAN DIDIKAN KANAK-KANAK

Setiap aktiviti Taman Asuhan atau Taman Didikan Kanak-Kanak hendaklah mematuhi syarat-syarat berikut:-

GD1 1 - Aktiviti ini boleh dibenarkan dirumah sesebuah atau di rumah berkembar.

GD1 2 - Rumah teres lot hujung boleh dipertimbangkan jika sekiranya tidak terdapat rumah berkembar atau sesebuah yang sesuai di kawasan tersebut.

GD1 3 - Tindakan merundingi jiran-jiran bersebelahan terlebih dahulu sebelum kelulusan diberikan.

GD1 4 - Mematuhi syarat-syarat Bomba.

GD1 5 - Mematuhi syarat-syarat Kesihatan.

GD1 6 - Kebenaran merancang hanyalah bagi tempoh satu tahun sahaja. Walaubagaimanapun tempoh lanjutan kebenaran merancang boleh diberikan jika majlis berpuas hati dengan segala peraturannya telah dipatuhi.

GD1 7 - Bangunan awam seperti dewan orang ramai, surau dan seumpamanya juga boleh dipertimbangkan.

GD1 8 - Hanya satu aktiviti sahaja dibenarkan disatu jalan bagi setiap 0.2 km.

GD1 9 - Jumlah kanak-kanak yang dibenarkan mestilah mematuhi pelan kepadatan pembangunan seperti di dalam pelan struktur Ipoh.

GD1 10 - Mematuhi syarat-syarat bahagian lalulintas, Jabatan Kejuruteraan, Majlis Bandaraya Ipoh.

Appendix 2: Demography by age group

Jadual 8.2 : Jumlah penduduk mengikut kumpulan umur, kawasan pihak berkuasa tempatan dan negeri, Malaysia, 2000 (samb.)
Table 8.2 : Total population by age group, local authority area and state, Malaysia, 2000 (cont'd.)

Negeri : PERAK
State

Daerah Pentadbiran/ Kawasan Pihak Berkuasa Tempatan *Administrative District/ Local Authority Area*	Kumpulan umur *Age group*							
	Jumlah *Total*	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
KINTA								
MB Ipoh	**529,906**	**48,506**	**52,076**	**50,021**	**51,818**	**40,948**	**38,597**	**40,349**
Chemor	2,543	239	259	242	238	157	187	199
Jelapang	4,691	292	341	430	508	321	323	359
Lahat	635	29	38	52	75	55	39	42
Majlis Perbandaran Ipoh	403,261	34,728	37,918	36,610	39,536	31,227	29,332	30,205
Simpang Pulai	4,290	365	386	396	435	251	307	366
Sungai Raya (Kampong Kepayang)	223	21	23	21	24	16	13	15
Tambun	978	116	100	114	77	67	79	75
Tanjong Rambutan	7,065	621	736	860	677	486	461	476
Kawasan selebih MB *Remainder of MB*	106,220	12,095	12,275	11,296	10,248	8,368	7,856	8,612
MD Kinta Barat	**68,765**	**6,798**	**7,071**	**6,932**	**6,996**	**5,282**	**4,394**	**4,584**
Bali, Tronoh	1,996	213	195	218	164	90	90	122
Batu Gajah	8,234	683	805	836	888	565	519	586
Chenderong	1,511	151	114	131	143	84	83	92
Kampong Perpaduan (Indian Settlement)	1,239	103	131	125	125	72	76	79
Nalla, Tronoh	1,526	110	114	119	131	132	118	89
Papan	520	36	48	53	49	37	18	26
Pusing & Gunong Hijau	4,519	349	387	419	442	274	239	270
Siputeh	179	16	26	18	14	5	16	11
Sungai Durian	1,643	136	153	167	150	72	76	83
Tanjong Tualang	1,473	139	135	133	124	68	67	86
Timah, Tanjong Tualang	1,394	145	129	127	114	50	64	95
Tronoh	1,645	76	90	95	357	404	70	68
Kawasan selebih MD *Remainder of MD*	42,886	4,641	4,744	4,491	4,295	3,429	2,958	2,977
MD Kinta Selatan	**72,847**	**6,372**	**7,303**	**7,236**	**7,380**	**4,943**	**4,223**	**4,528**
Gopeng	3,068	249	284	267	293	208	211	226
Jeram	1,720	141	152	158	122	85	88	113
Kampar	17,046	1,153	1,499	1,507	1,717	1,203	920	939
Kopisan Baharu	2,849	209	263	267	266	179	159	164
Kota Baharu	304	30	25	36	46	18	22	17
Kuala Dipang	323	39	34	27	31	23	33	25
Lawan Kuda Baharu	4,124	328	382	371	370	251	266	267
Malim Nawar	3,767	300	309	387	384	189	184	195
Mambang Di-Awan	6,263	534	582	656	610	283	268	331
Sungai Siput Selatan	265	23	20	15	15	20	12	16
Tronoh Mines	644	63	63	52	54	30	24	46
Kawasan selebih MD *Remainder of MD*	32,474	3,303	3,690	3,493	3,472	2,454	2,036	2,189
KERIAN								
MD Kerian	**98,379**	**10,129**	**10,773**	**11,830**	**10,380**	**6,633**	**6,397**	**6,428**
Alor Pongsu	242	18	32	33	27	15	10	13
Bagan Serai	8,076	815	888	960	737	495	495	549
Bukit Merah	176	28	15	23	12	9	16	12
Changkat Lobak	452	65	60	61	42	28	34	22
Dew	435	45	47	60	47	28	24	31
Gunong Semanggol	230	44	25	22	19	7	17	21
Jalan Baharu, Batu Lima	532	59	60	56	42	39	38	52
Kuala Kurau	6,377	576	698	728	623	355	418	437
Parit Buntar	4,317	422	471	518	434	265	280	289
Simpang Empat (Mukim Gunong Semanggol & Selinsing)	246	24	26	31	23	8	11	18
Simpang Empat (Mukim Parit Buntar)	714	82	76	109	79	52	37	42

Nota : Angka-angka di atas tidak disesuaikan.
Note : The above figures have not been adjusted.

Jadual 8.2 : Jumlah penduduk mengikut kumpulan umur, kawasan pihak berkuasa tempatan dan negeri, Malaysia, 2000 (samb.)
Table 8.2 : Total population by age group, local authority area and state, Malaysia, 2000 (cont'd.)

Negeri : PERAK
State

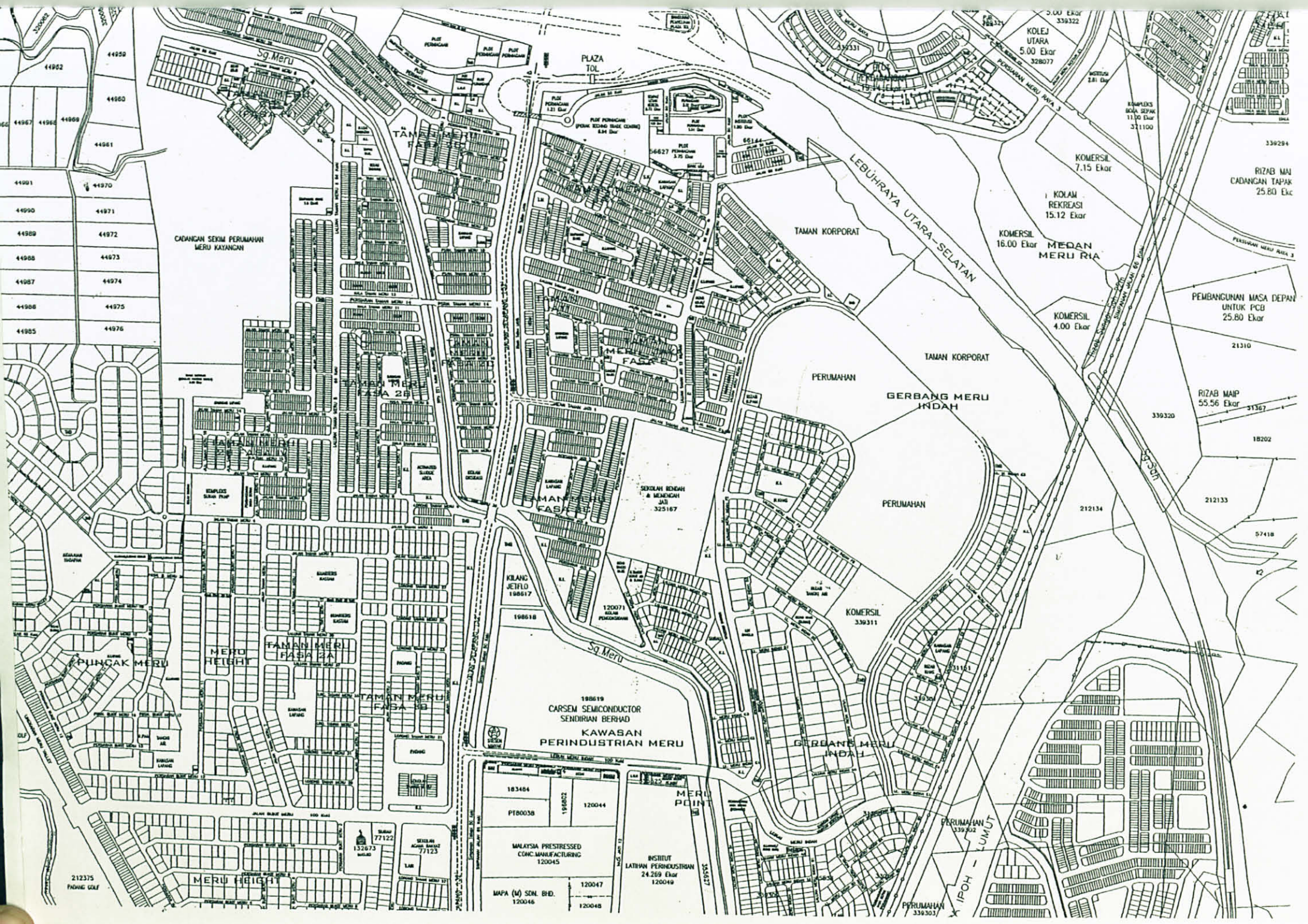
Daerah Pentadbiran/ Kawasan Pihak Berkuasa Tempatan *Administrative District/ Local Authority Area*	Kumpulan umur *Age group*								
	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75 +
KINTA									
MB Ipoh	**41,186**	**39,204**	**33,141**	**28,222**	**19,377**	**17,838**	**11,348**	**8,231**	**9,044**
Chemor	185	165	125	138	94	104	84	67	60
Jelapang	325	304	285	297	266	263	149	99	129
Lahat	39	42	57	46	24	31	26	17	23
Majlis Perbandaran Ipoh	31,532	30,080	25,927	22,594	15,677	14,445	9,203	6,750	7,497
Simpang Pulai	297	270	288	245	190	187	141	88	78
Sungai Raya (Kampong Kepayang)	15	13	17	10	8	10	6	4	7
Tambun	66	103	51	38	22	28	18	13	11
Tanjong Rambutan	470	606	500	362	229	217	145	110	109
Kawasan selebih MB *Remainder of MB*	8,257	7,621	5,891	4,492	2,867	2,553	1,576	1,083	1,130
MD Kinta Barat	**4,707**	**4,485**	**3,899**	**3,557**	**2,575**	**2,765**	**1,880**	**1,337**	**1,503**
Bali, Tronoh	84	132	96	118	100	156	77	67	74
Batu Gajah	635	621	572	431	254	290	214	153	182
Chenderong	79	85	108	100	109	89	53	38	52
Kampong Perpaduan (Indian Settlement)	93	96	80	62	45	50	41	29	32
Nalla, Tronoh	87	67	81	108	100	98	64	45	63
Papan	38	28	30	52	26	23	23	15	18
Pusing & Gunong Hijau	295	285	247	274	209	276	221	158	174
Siputeh	9	12	7	12	11	10	4	2	6
Sungai Durian	88	98	102	115	89	128	89	38	59
Tanjong Tualang	81	80	103	112	99	72	63	47	64
Timah, Tanjong	76	67	77	110	97	89	55	47	52
Tronoh	65	85	76	64	49	50	34	25	37
Kawasan selebih MD *Remainder of MD*	3,077	2,829	2,320	1,999	1,387	1,434	942	673	690
MD Kinta Selatan	**4,823**	**4,839**	**4,478**	**4,191**	**3,205**	**3,363**	**2,325**	**1,757**	**1,881**
Gopeng	197	211	200	170	159	136	101	65	91
Jeram	104	95	123	114	114	129	85	51	46
Kampar	1,100	1,186	1,176	1,120	837	946	661	486	596
Kopisan Baharu	159	179	167	176	144	181	135	96	105
Kota Baharu	18	13	14	11	16	15	6	3	14
Kuala Dipang	16	11	13	12	20	14	7	10	8
Lawan Kuda Baharu	235	223	260	310	214	266	154	112	115
Malim Nawar	228	227	230	213	185	242	196	142	156
Mambang Di-Awan	383	407	410	436	331	358	227	203	244
Sungai Siput Selatan	15	13	10	24	17	19	19	17	10
Tronoh Mines	27	41	51	45	40	46	22	19	21
Kawasan selebih MD *Remainder of MD*	2,341	2,233	1,824	1,560	1,128	1,011	712	553	475
KERIAN									
MD Kerian	**6,438**	**6,136**	**5,475**	**5,057**	**3,525**	**3,305**	**2,420**	**1,739**	**1,714**
Alor Pongsu	14	15	16	19	9	10	3	3	5
Bagan Serai	599	589	494	417	291	264	195	137	151
Bukit Merah	12	9	6	7	6	10	5	4	2
Changkat Lobak	21	28	22	17	14	21	6	6	5
Dew	33	25	19	19	19	14	7	10	7
Gunong Semanggol	12	12	10	12	8	4	7	5	5
Jalan Baharu, Batu Lima	30	38	28	27	12	22	12	11	6
Kuala Kurau	516	399	371	329	261	226	195	131	114
Parit Buntar	336	290	243	238	142	120	120	68	81
Simpang Empat (Mukim Gunong Semanggol & Selinsing)	20	12	14	15	11	14	5	5	9
Simpang Empat (Mukim Parit Buntar)	42	43	34	34	20	19	16	11	18

Nota : Angka-angka di atas tidak disesuaikan.
Note : The above figures have not been adjusted.

Appendix 3: Topographic Map of Meru


More
Map
Satellite
Terrain
400m
300m
200m
100m
100m
A1
E1
Taman Meru Jaya
Taman Meru Sc
Taman Meru
Taman Ehsan
Taman Tawas Permai
Taman Lake Lim
Taman Permai
500 m
1000 ft
©2009 Google - Map data ©2009 AND, MapT Tele Atlas, Europa Technologies -

Appendix 4: Land Use Map of Meru Zone A, Ipoh


Sg.Meru
PLAZA TOL
LEBUHRAYA UTARA-SELATAN
TAMAN KORPORAT
KOMERSIL 16.00 Ekar
MEDAN MERU RIA
KOMERSIL 7.15 Ekar
KOLAM REKREASI 15.12 Ekar
KOLEJ UTARA 5.00 Ekar 328077
KOMERSIL 4.00 Ekar
PEMBANGUNAN MASA DEPAN UNTUK PCB 25.80 Ekar
RIZAB MAI CADANGAN TAPAK 25.80 Ekar
RIZAB MAIP 55.56 Ekar
CADANGAN SEKIM PERUMAHAN MERU KAYANGAN
TAMAN MERU FASA 2B
TAMAN MERU FASA 2A
TAMAN MERU FASA 2C
TAMAN MERU FASA 3A
TAMAN MERU FASA 3B
PERUMAHAN
GERBANG MERU INDAH
SEKOLAH BERDAH & MENENGAH JASI 325167
KOMERSIL 339311
KILANG JETFLO 198617
198618
198619
CARSEM SEMICONDUCTOR SENDIRIAN BERHAD
KAWASAN PERINDUSTRIAN MERU
MERU POINT
MERU HEIGHT
PUNCAK MERU
MALAYSIA PRESTRESSED CONC.MANUFACTURING 120045
MAPA (M) SDN. BHD. 120046
INSTITUT LATIHAN PERINDUSTRIAN 24.269 Ekar 120049
IPOH - LUMUT
PERUMAHAN 339303
PERUMAHAN 339302

Appendix 5: Applications Procedure for Kindergarten

MUKADIMAH

Kelulusan perancangan atau yang dipanggil Kebenaran Merancang adalah perkara utama yang perlu didapati untuk sesuatu pemajuan.

Bagi menjalankan aktiviti TASKA / TADIKA, pemohon perlu mendapatkan Kebenaran Merancang terlebih dahulu sebelum mendapat kelulusan-kelulusan lain seperti Bomba, Kesihatan dan Jabatan Kebajikan Masyarakat/ Jabatan Pendidikan.

SENARAI KEPERLUAN

- Surat Permohonan/*Cover Letter*
- Borang Kebenaran Merancang (Borang A)
- Pelan Tapak
- Pelan Ruang Lantai
- Salinan Hakmilik
- Fee Permohonan
- Salinan Bayaran Cukai Taksir terkini

FEE PERMOHONAN

Merujuk kepada Kaedah-kaedah Pengawalan Perancangan Perancangan (Am) Negeri Perak 1991, Akta Perancangan Bandar dan Desa 1976, setiap permohonan yang melibatkan pertukaran aktiviti tanah atau bangunan kepada aktiviti TASKA / TADIKA dikenakan bayaran proses sebanyak RM200.

JENIS PREMIS

Jenis Premis yang boleh dipertimbangkan di kawasan perumahan untuk aktiviti TASKA/TADIKA adalah seperti berikut :-

- Rumah Sesebuah/Banglo
- Rumah Berkembar
- Rumah Teres (Lot tepi atau hujung)
- Tempat-Tempat Ibadat
- Institusi

Jarak premis yang menjalankan aktiviti yang sama hendaklah tidak kurang dari 200 meter di jalan yang sama.

Contoh

TEMPOH PROSES

Sekiranya premis yang dipohon boleh dipertimbangkan untuk kelulusan **Kebenaran Merancang**, tempoh keputusan ialah tidak melebihi 3 bulan.

PROSEDUR

- Setelah setiap permohonan yang sempurna diterima, bil proses akan dikeluarkan.
- Laporan tapak akan dibuat oleh Juruteknik Perancang Bandar.
- Pihak Pentadbiran akan membuat proses merundingi jiran-jiran bersempadan (jika kawasan tersebut tiada Rancangan Tempatan)
- Jiran bersempadan diberi peluang untuk mengemukakan bantahan dalam tempoh 21 hari bermula tarikh notis disampaikan.
- Majlis akan mendengar bantahan, jika ada, dalam masa 30 hari.

KEPUTUSAN

- Sebaik sahaja tempoh merundingi jiran tamat, permohonan akan terus dikemukakan kepada Mesyuarat Jawatankuasa Perancangan dan Kawalan Pembangunan (Majlis) di sessi yang terdekat sekali.
- Keputusan permohonan akan dihantar kepada pemohon dalam tempoh 2 minggu selepas tarikh mesyuarat tersebut.
- Sekiranya permohonan lulus, Kebenaran Merancang akan diberikan kepada pemohon di mana tempoh luput bagi .sesuatu permohonan Kebenaran Merancang adalah dua belas bulan selepas tarikh ianya diberi berdasarkan Seksyen (24) Akta 172.